Appln. No. 09/742,157
Amendment dated March 11, 2005

PATENT

## REMARKS/ARGUMENTS

The Examiner's Action of October 18, 2004, has been received and reviewed by counsel for Assignee. In that Action claims 1-22 were presented for examination. All claims were rejected under 35 U.S.C. § 103 based upon *Eshel, et al.*, U.S. 5,940,840, in view of *Gokulrangan*, U.S. 6,658,512. By this response counsel has canceled all pending claims and submits herewith new claims 23-33. Applicants' invention is discussed first below, followed by a discussion of the references.

Applicants' invention provides a technique for guaranteeing data access speed in storage systems. In general, storage systems are now used in the context in which one system can be situated in one location, and a second system situated some distance away to provide fault tolerance, data security in case of natural disaster, and the like. The two systems are typically coupled by an internet connection, but other network connections can also be used. With the many different types of storage systems, the many different types of media within such systems, and the different types of networks interconnecting such systems, the user of such a system typically will not know the actual data access speed for a particular application. As a result, high speed storage may be connected over a low speed network, or low speed storage over a high speed network. With the system functioning no faster than its slowest aspect, this results in wasted performance on either the network side or the storage system side.

The technology invented by Applicants herein provides a technique for assuring desired data access speed over a network to a storage system. In particular, communications speed and media access speed are assigned with a consideration to obtaining a desired user-requested speed. Thus, for example, higher speed storage disks can be assigned to communicate over higher speed networks, while slower speed storage can communicate over a slower speed network. According to this invention, the storage system allocates data paths between the storage system and the network, and/or allocates the choice of media to the data paths to provide the desired performance levels.

For example, claims 23 and 24 call out a technique by which the storage system allocates data paths based upon desired data rates, and in claim 24 allocates individual ones of the media to individual ones of the data paths to provide the desired quality of service.

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The cited references do not teach this claimed invention, either separately or in combination. *Eshel, et al.*, relates to a method for determining empirically the data bandwidth that a computer disk can continuously sustain while it is reading data. In essence, *Eshel, et al.*, relates to a measurement technology for measuring the read bandwidth or a write bandwidth of a hard disk drive. *Eshel, et al.*, does not address storage systems in general, but rather only the hard disk drive component, and *Eshel, et al.*, does not address issues relates to improving overall system performance by an appropriate allocation of data paths and media.

The other reference cited, *Gokulrangan*, does not provide dismissing teaching. *Gokulrangan* relates to a computer system in which one wishes to control the allocation of resources to a peripheral bus. In *Gokulrangan* the data transfer rate on a peripheral bus is monitored and utilization value obtained. Depending upon the result of this utilization value, additional resources are permitted to use the bus. As mentioned above, *Gokulrangan* does not address storage systems, does not address selection of appropriate data paths in such storage systems, and does not address issues related to selection of one media over another in a storage system.

Accordingly, counsel respectfully submits that the cited references taken singly or combined do not teach the Applicants' claimed invention as now presented for further examination.

If the Examiner believes a telephone conference would expedite prosecution of this application, he is invited to telephone the undersigned at 650-326-2400.

Respectfully submitted,

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